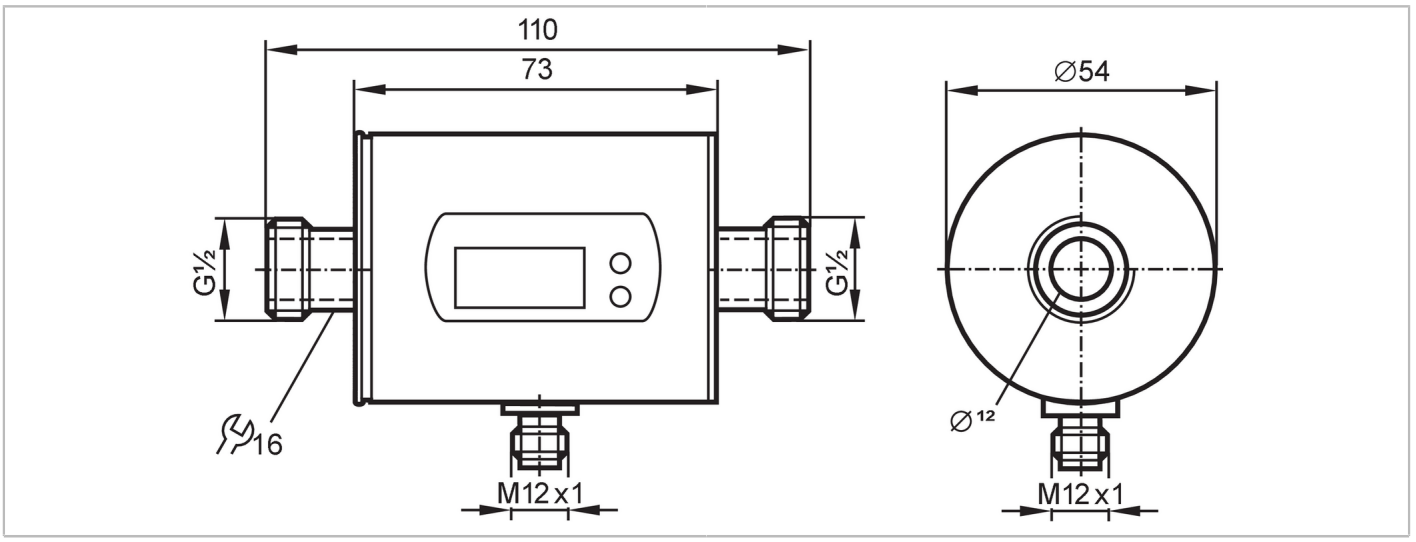
SM6001

Magnetic-inductive flow meter

SMR12GGXFRKG/US-100



Product characteristics				
Number of inputs and outputs		Number of digital outputs: 2; Number of analogue outputs: 1		
Measuring range		1.5...396 gph	0.03...6.6 gpm	
Process connection		threaded connection G 1/2 external thread DN15 flat seal		
Application				
Special feature		Gold-plated contacts		
Application		totaliser function; for industrial applications		
Installation		connection to pipe by means of an adapter		
Media		conductive liquids; water; hydrous media		
Note on media		conductivity: ≥ 20 µS/cm		
		viscosity: < 70 mm²/s (40 °C)		
Medium temperature	[°F]	14...158		
Pressure rating		16 bar	232 psi	1.6 MPa
MAWP for applications according to CRN		15.3 bar	1.53 MPa	
Electrical data				
Operating voltage	[V]	18...30 DC; (to SELV/PELV)		
Current consumption	[mA]	95; (24 V)		
Min. insulation resistance	[MΩ]	100; (500 V DC)		
Protection class		III		
Reverse polarity protection		yes		
Power-on delay time	[s]	5		
Measuring principle		magnetic-inductive		
Inputs / outputs				
Number of inputs and outputs		Number of digital outputs: 2; Number of analogue outputs: 1		
Inputs				
Inputs		counter reset		
Outputs				
Total number of outputs		2		

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Output signal		switching signal; analogue signal; pulse signal; IO-Link; (configurable)
Electrical design		PNP/NPN
Number of digital outputs		2
Output function		normally open / normally closed; (parameterisable)
Max. voltage drop switching output DC	[V]	2
Permanent current rating of switching output DC	[mA]	200
Number of analogue outputs		1
Analogue current output	[mA]	4...20; (scalable)
Max. load	[Ω]	500
Analogue voltage output	[V]	0...10; (scalable)
Min. load resistance	[Ω]	2000
Pulse output		flow rate meter
Short-circuit protection		yes
Type of short-circuit protection		pulsed
Overload protection		yes

Measuring/setting range			
Measuring range		1.5...396 gph	0.03...6.6 gpm
Display range		-475.5...475.5 gph	-7.925...7.925 gpm
Resolution		0.5 gph	0.01 gpm
Set point SP		3.5...396.5 gph	0.06...6.6 gpm
Reset point rP		1.5...394 gph	0.03...6.57 gpm
Analogue start point ASP		0...318 gph	0...5.3 gpm
Analogue end point AEP		78...396 gph	1.3...6.6 gpm
In steps of		0.5 gph	0.01 gpm
Volumetric flow quantity monitoring			
Pulse value		0.01...30 000 000 gal	
Pulse length	[s]	0,01...2	
Temperature monitoring			
Measuring range	[°F]	-4...176	
Resolution	[°F]	0.1	
Set point SP	[°F]	-2.5...176	
Reset point rP	[°F]	-3.5...175	
Analogue start point	[°F]	-4...140.5	
Analogue end point	[°F]	31.5...176	
In steps of	[°F]	0.5	

Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)		± (0,8 % MW + 0,5 % MEW)
Repeatability		± 0,2% MEW
Temperature monitoring		
Accuracy	[K]	± 2,5 (Q > 0,26 gpm)

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Response times			
Flow monitoring			
Response time	[s]	0.15; (dAP = 0, T19)	
Delay time programmable dS, dr	[s]	0...50	
Damping process value dAP	[s]	0...5	
Temperature monitoring			
Dynamic response T05 / T09	[s]	T09 = 20 (Q > 0,26 gpm)	
Software / programming			
Parameter setting options		Flow monitoring; quantity meter; Preset counter; Temperature monitoring; hysteresis / window; normally open / normally closed; switching logic; current/ voltage/pulse output; start-up delay; display can be deactivated; Display unit	
Interfaces			
Communication interface		IO-Link	
Transmission type		COM2 (38,4 kBaud)	
IO-Link revision		1.1	
SDCI standard		IEC 61131-9	
Profiles		Smart Sensor - SSP 0	Generic Profiled Sensor
		Function	Device identification
		Function	Process data variable
		Function	Device diagnosis
SIO mode		yes	
Required master port type		A	
Process data analogue		3	
Process data binary		2	
Min. process cycle time	[ms]	5	
Supported DeviceIDs		**Type of operation**	**DeviceID**
		default	570
Operating conditions			
Ambient temperature	[°F]	14...140	
Storage temperature	[°F]	-13...176	
Protection		IP 67	
Tests / approvals			
EMC		DIN EN 60947-5-9	
Shock resistance		DIN IEC 68-2-27	20 g (11 ms)
Vibration resistance		DIN IEC 68-2-6	5 g (10...2000 Hz)
MTTF	[years]	160	
Pressure Equipment Directive		Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data			
Weight	[g]	546	
Housing		cylindrical	
Inlet pipe length		3 x DN	
Outlet pipe length		1 x DN	
Dimensions	[mm]	Ø 54 / L = 110	
Materials		stainless steel (316L/1.4404); PBT-GF20; PC; FKM; TPE	

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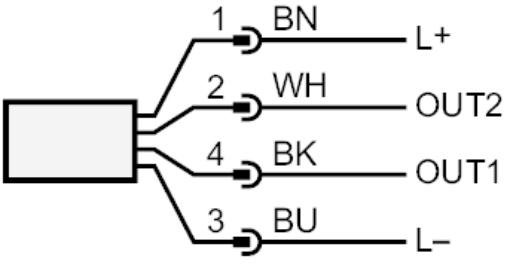
Materials (wetted parts)	stainless steel (316L/1.4404); PEEK; FKM	
Process connection	threaded connection G 1/2 external thread DN15 flat seal	
Displays / operating elements		
Display	Display unit	6 x LED, green (gpm, gph, gal, °F, 10^3, 1000 x 10^3)
	switching status	2 x LED, yellow
	measured values	alphanumeric display, 4-digit
	programming	alphanumeric display, 4-digit
Remarks		
Remarks	MW = measured value	
	MEW = Final value of the measuring range	
Pack quantity	1 pcs.	

Electrical connection

Connector: 1 x M12; coding: A; Contacts: 4, gold-plated

Connection



	colours to DIN EN 60947-5-2
OUT1:	switching output volumetric flow quantity monitoring
	Pulse output quantity meter
	signal output Preset counter
	IO-Link
OUT2:	switching output volumetric flow quantity monitoring
	switching output Temperature monitoring
	analogue output volumetric flow quantity monitoring
	analogue output Temperature monitoring
	input counter reset
	Core colours :
BK =	black
BN =	brown
BU =	blue
WH =	white

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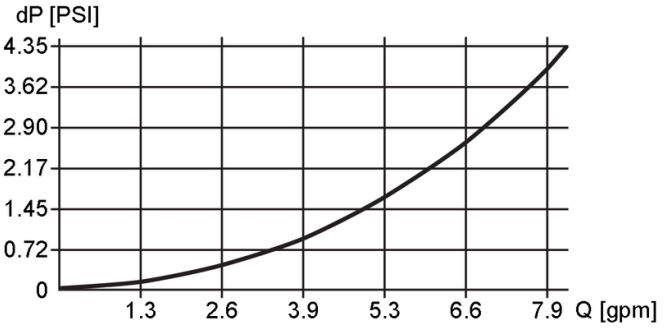
Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity